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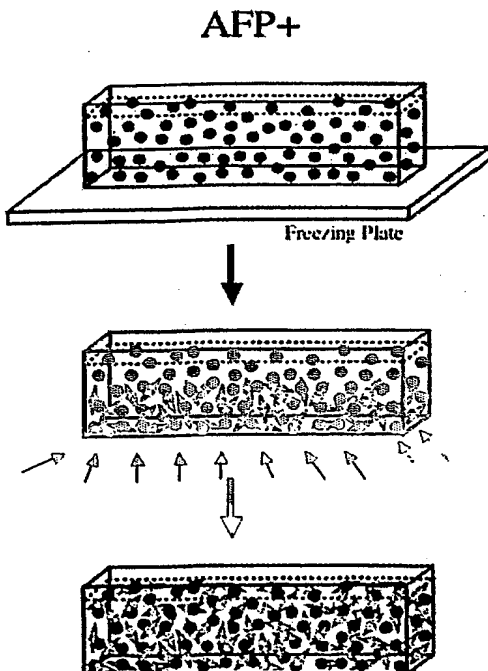
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[続葉有]

(54) Title: METHOD OF INHIBITING FREEZE CONCENTRATING OF SUBSTANCE IN WET MATERIAL, METHOD OF INHIBITING DEACTIVATION OF PHYSIOLOGICALLY ACTIVE SUBSTANCE, AND PROCESS FOR PRODUCING LYOPHILIZATE OR FROZEN MATTER HAVING COMPONENT HOMOGENEOUSLY DIFFUSED THEREIN

(54) 発明の名称: 含水物における物質の凍結濃縮を抑制する方法、生理活性物質の失活を抑制する方法、および成分が均質に拡散した凍結物又は凍結乾燥物を製造する方法



(57) Abstract: When in the freezing of a wet material containing water molecules and a substance other than water molecules, freeze concentrating of the substance in the wet material is to be inhibited, when in the freezing of a wet material containing a physiologically active substance, deactivation of the physiologically active substance is to be inhibited, and when through freezing or lyophilization of a wet material containing water molecules and a component other than water molecules, it is intended to produce a lyophilizate or frozen matter having the component homogeneously diffused therein, an antifreeze protein is added to the wet material.

(57) 要約: 水分子及び水分子以外の物質を含む含水物を凍結する際、前記含水物中における前記物質の凍結濃縮を抑制する場合において、生理活性物質を含む含水物を凍結する際、該生理活性物質の失活を抑制する場合において、または水分子及び水分子以外の成分を含む含水物を凍結又は凍結乾燥させて、前記成分が均質に拡散した凍結物又は凍結乾燥物を製造する場合において、前記含水物に不凍タンパク質を添加する。

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/17020

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ A01N1/02, A61K9/19, 35/14, 47/42, A23L3/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ A01N1/02, A61K9/19, 35/14, 47/42, A23L3/36

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | WO 01/078505 A1 (ORGAN RECOVERY SYSTEMS, INC.), 25 October, 2001 (25.10.01), Full text & JP 2003-530406 A | 1-9 |
| X | WO 98/04147 A1 (UNILEVER N.V.), 05 February, 1998 (05.02.98), Full text & JP 2000-515753 A | 1-9 |
| X | WO 96/39878 A1 (THE PILLSBURY CO.), 19 December, 1996 (19.12.96), Full text & US 5620732 A1 & JP 10-508759 A | 1-9 |

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:
 "A" document defining the general state of the art which is not considered to be of particular relevance
 "E" earlier document but published on or after the international filing date
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
 "&" document member of the same patent family

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| P,X | JP 2003-284937 A (Ikeda Shokken Kabushiki Kaisha), 07 October, 2003 (07.10.03), Full text (Family: none) | 1-9 |
| P,X | JP 2003-25056 A (Ikeda Shokken Kabushiki Kaisha), 09 September, 2003 (09.09.03), Full text (Family: none) | 1-9 |
| E,X | JP 2004-19 A (Ikeda Shokken Kabushiki Kaisha), 08 January, 2004 (08.01.04), Full text (Family: none) | 1-9 |